

Application No. 10/580,097
Paper Dated: April 22, 2009
In Reply to USPTO Correspondence of January 23, 2009
Attorney Docket No. 5204-061409

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

1. (Original) A soluble metal oxide comprising:
one or more metal oxide crystallite particles;
each crystallite particle comprising a plurality of metal and oxygen moieties;
an inner organic binding group attached to at least one metal moiety; and
an outer organic binding group attached to at least one inner organic binding group.

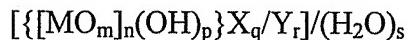
2. (Original) A soluble metal oxide as claimed in claim 1 wherein each crystallite particle further comprises at least one hydroxyl group.

3. (Previously Presented) A soluble metal oxide as claimed in claim 1 wherein;

each inner organic binding group is attached to each metal moiety by a covalent bond; and

each outer organic binding group is attached to each inner organic binding group by a hydrogen bond.

4. (Previously Presented) A soluble metal oxide as claimed in claim 1 of the general formula:



wherein:

M represents a metal moiety

O represents an oxygen moiety

m is a variable dependent on the oxidation state of the metal moiety (M) and is in the region of between 1 and 3

n represents the number of metal oxides in the crystallite particle

OH represents an hydroxyl group

X represents an inner organic binding group

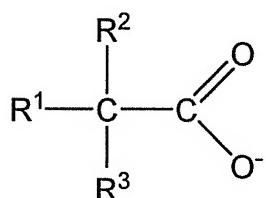
Y represents an outer organic binding group

H₂O represents hydrogen bonded water

p, q, r and s represent variables dependent in particular on the number of metal oxides in the crystallite particle (n), and reaction conditions.

5. (Original) A soluble metal oxide as claimed in claim 4,

Wherein X represents the inner organic binding group of the general formula,



Wherein:

R¹ = an organic group, a halo-organic group, a hydrogen or a halogen;

R² = an organic group, a halo-organic group, a hydrogen or a halogen; and

R³ = an organic group, a halo-organic group, a hydrogen or a halogen.

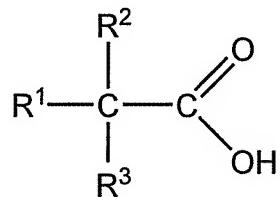
6. (Original) A soluble metal oxide as claimed in Claim 5, wherein

R¹ represents a straight-chain, branched chain or cyclic organic group with up to 20 carbons, a straight-chain, branched-chain, or cyclic halo-organic group with up to 20 carbons and up to 41 halogen atoms, a hydrogen or a halogen;

R² represents a straight-chain, branched-chain or cyclic organic group with up to 20 carbons, a straight-chain, branched-chain, or cyclic halo-organic group with up to 20 carbons and up to 41 halogen atoms, a hydrogen or a halogen; and

R^3 represents a straight-chain, branched-chain or cyclic organic group with up to 20 carbons, a straight-chain, branched-chain, or cyclic halo-organic group with up to 20 carbons and up to 41 halogen atoms, a hydrogen or a halogen.

7. (Previously Presented) A soluble metal oxide as claimed in claim 4 wherein Y represents the outer organic binding group of the general formula:



Wherein:

R^1 = an organic group, a halo-organic group, a hydrogen or a halogen;

R^2 = an organic group, a halo-organic group, a hydrogen or a halogen; and

R^3 = an organic group, a halo-organic group, a hydrogen or a halogen.

8. (Original) A soluble metal oxide as claimed in Claim 7, wherein

R^1 represents a straight-chain, branched-chain or cyclic organic group with up to 20 carbons, a straight-chain, branched-chain, or cyclic halo-organic group with up to 20 carbons and up to 41 halogen atoms, a hydrogen or a halogen;

R^2 represents a straight-chain, branched-chain or cyclic organic group with up to 20 carbons, a straight-chain, branched-chain, or cyclic halo-organic group with up to 20 carbons and up to 41 halogen atoms, a hydrogen or a halogen; and

R^3 represents a straight-chain, branched-chain or cyclic organic group with up to 20 carbons, a straight-chain, branched-chain, or cyclic halo-organic group with up to 20 carbons and up to 41 halogen atoms, a hydrogen or a halogen.

9. (Previously Presented) A soluble metal oxide as claimed in claim 1 wherein each metal oxide crystallite particle is a nanocrystallite particle having an average particle size in the range of between 5 and 100 Å.

10. (Previously Presented) A soluble metal oxide as claimed in claim 1 wherein the metal moiety is selected from the group comprising one of tin and titanium.

11. (Previously Presented) A soluble mixed metal oxide comprising:
the soluble metal oxide as claimed in claim 1 wherein each crystallite particle further comprises:

at least one metal ion attached to each crystallite particle.

12. (Original) A soluble mixed metal oxide as claimed in claim 11,
wherein:

each inner organic binding group is attached to either a metal moiety or to both a metal moiety and to a metal ion;

each outer organic binding group is attached to either a metal ion, or to an inner organic binding group, or to both a metal ion and an inner organic binding group; and

wherein the metal ions are attached to any combination of the following:

- an oxygen moiety;
- an hydroxyl group;
- an inner organic binding group; and
- an outer organic binding group.

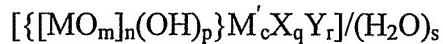
13. (Original) A soluble mixed metal oxide as claimed in claim 12
wherein:

each inner organic binding group is attached to each metal moiety by a covalent bond and to each metal ion by either a covalent bond or a donor bond;

each outer organic binding group is attached to each inner organic binding group by a hydrogen bond and to each metal ion by either a covalent bond or a donor bond; and

each metal ion is attached to each oxygen moiety by a covalent bond, to each hydroxyl group by either a donor bond or a covalent bond, to each inner organic binding group by either a covalent or a donor bond, and to each outer organic binding group by either a covalent or a donor bond.

14. (Currently Amended) A soluble mixed metal oxide as claimed in claim 11 of the general formula:



M represents a metal moiety

O represents an oxygen moiety

m is a variable dependent on the oxidation state of the metal moiety (M) and is in the region of between 1 and 3

n represents the number of metal oxides in the crystallite particle

OH represents an hydroxyl group

M' represents a metal ion

X represents an inner organic binding group

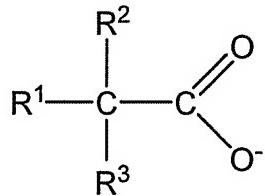
Y represents an outer organic binding group

H₂O represents hydrogen bonded water

c, p, q, r and s represent variables dependent in particular on the number of metal oxides in the crystallite particle (n), and reaction conditions.

15. (Original) A soluble mixed metal oxide as claimed in claim 14 wherein the metal ion (M') is selected from the group comprising of tetravalent tin, divalent tin, tetravalent titanium, divalent titanium, indium, antimony, zinc, titanium, vanadium, chromium, manganese, iron, cobalt, nickel, zirconium, molybdenum, palladium, iridium and magnesium.

16. (Previously Presented) A soluble mixed metal oxide as claimed in claim 14, wherein X represents the inner organic binding group of the general formula:



Wherein:

R¹ = an organic group, a halo-organic group, a hydrogen or a halogen;

R² = an organic group, a halo-organic group, a hydrogen or a halogen; and

R³ = an organic group, a halo-organic group, a hydrogen or a halogen.

17. (Original) A soluble mixed metal oxide as claimed in Claim 16,
wherein

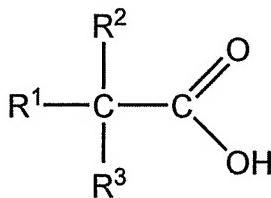
R¹ represents a straight-chain, branched-chain or cyclic organic group with up to 20 carbons, a straight-chain, branched-chain, or cyclic halo-organic group with up to 20 carbons and up to 40 halogen atoms, a hydrogen or a halogen;

R² represents a straight-chain, branched-chain or cyclic organic group with up to 20 carbons, a straight-chain, branched-chain, or cyclic halo-organic group with up to 20 carbons and up to 40 halogen atoms, a hydrogen or a halogen; and

R³ represents a straight-chain, branched-chain or cyclic organic group with up to 20 carbons, a straight-chain, branched-chain, or cyclic halo-organic group with up to 20 carbons and up to 40 halogen atoms, a hydrogen or a halogen;

18. (Previously Presented) A soluble mixed metal oxide as claimed in
claim 14

wherein Y represents the outer organic binding group of the general formula.



Wherein:

R^1 = an organic group, a halo-organic group, a hydrogen or a halogen;

R^2 = an organic group, a halo-organic group, a hydrogen or a halogen; and

R^3 = an organic group, a halo-organic group, a hydrogen or a halogen.

19. (Original) A soluble mixed metal oxide as claimed in claim 18,
wherein:

R^1 represents a straight-chain, branched-chain or cyclic organic group with up to 20 carbons, a straight-chain, branched-chain, or cyclic halo-organic group with up to 20 carbons and up to 41 halogen atoms, a hydrogen or a halogen;

R^2 represents a straight-chain, branched-chain or cyclic organic group with up to 20 carbons, a straight-chain, branched-chain, or cyclic halo-organic group with up to 20 carbons and up to 41 halogen atoms, a hydrogen or a halogen; and

R^3 represents a straight-chain, branched-chain or cyclic organic group with up to 20 carbons, a straight-chain, branched-chain, or cyclic halo-organic group with up to 20 carbons and up to 41 halogen atoms, a hydrogen or a halogen;

20. (Previously Presented) A soluble mixed metal oxide as claimed in claim 11 wherein each crystallite particle is a nanocrystallite particle having an average particle size in the range of between 5 and 100 Å.

21. (Previously Presented) A soluble mixed metal oxide as claimed in claim 11 wherein the metal moiety is selected from the group comprising one of tin and titanium.

22-49. (Cancelled)